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(54) FOLDED SHEET DISPENSER

SPENDER FÜR GEFALLTETE BLÄTTER

DISTRIBUTEUR DE FEUILLES PLIEES

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Description

[0001] The present invention is directed to folded sheet dispensers. Particularly, the present invention is directed to bottom discharge sheet dispensers for dispensing folded tissue sheets, paper towels sheets or the like. More particularly, the present invention is directed to bottom discharge sheet dispensers for dispensing interleaved bath tissue sheets.

[0002] DE-A-3127358 discloses a paper tissue dispensing system having a V-shaped bottom portion with an aperture allowing individual removal of the folded sheets.

[0003] The present invention provides a dispenser for dispensing a plurality of vertically stacked, folded sheets each having a leading edge, a trailing edge and spaced-apart side edges. The dispenser comprises a forward wall and a rear wall connected by spaced-apart side walls. The rear wall is adapted for securing the dispenser to a support. The dispenser also comprises a bottom surface defining an opening having a length dimension greater than a width dimension, the bottom surface being formed by first and second surfaces. In use, the side edges of each sheet are urged inwardly by the width dimension of the opening as said sheet passes through the opening. The invention is characterized in that the first and second surfaces intersect along an edge parallel to the width dimension of the opening at an angle of less than 180° such that the first surface extends in an upward direction from the edge towards the forward wall of the dispenser, at least part of the opening being defined by the first surface.

[0004] The length dimension of the opening may generally be in a transverse orientation with respect to the orientation of the forward wall and desirably, the length dimension of the opening may be generally perpendicular to the forward wall. Generally, the shape of the opening may be characterized as rod-shaped, oval, star, dumbbell, clover, elliptical, keyhole-shaped, and/or oblong. The shape of the opening may be characterized by other shapes so long as the width dimension is configured to narrow a sheet of material passing therethrough.

[0005] The material dispensed by the dispenser is a plurality of vertically stacked, folded sheets. Each sheet includes a leading edge and a trailing edge spaced-apart by side edges connected to the leading and trailing edges. During the process of dispensing such folded sheets from the dispenser, the side edges of the folded sheets are urged inwardly towards each other, or are converged by the width dimension of the discharge opening as said sheets pass through the discharge opening. In this way, it may be said that the sheets are "narrowed" by the width dimension of the discharge opening as the sheets pass through or traverse the discharge opening.

[0006] Embodiments of the invention will now be described by way of example only and with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of a dispenser with certain portions cut away;
FIG. 1A is a cross-sectional view of FIG. 1 through lines 1-1;
FIG. 2 is a perspective view of another embodiment of a dispenser;
FIG. 2A is a cross sectional view of FIG. 2 through lines 2-2;
FIGS. 3A-E illustrate various discharge opening shapes;
FIGS. 4A-B, which are not in accordance with the invention but are useful for illustrating some aspects, show schematic cross sections of a dispenser illustrating a dispensing sequence for a plurality of vertically stacked, interleaved sheets; and
FIG. 5 is a fragmented, enlarged, perspective view of the dispenser of FIG. 1 illustrating the dispenser in use with a plurality of vertically stacked sheets supported within the dispenser.

[0007] Referring now to FIG. 1, a bottom discharge tissue or paper towel dispenser 10 is illustrated. The dispenser 10 includes a housing 12 sized for receiving a plurality of vertically stacked, interleaved sheets (see for illustration FIGS. 4A and 4B).

[0008] The housing 12 includes a forward wall 14, a rear wall 16 and two side walls 18 and 20. Desirably, the forward wall 14 and the rear wall 16 are vertically orientated and are separated by the spaced-apart vertically orientated side walls 18 and 20. The rear wall 16 is configured to be secured to a support surface (FIGS. 4A and 4B), such as a wall, in a conventional manner, such as by bolting, gluing, nailing, brackets, screwing, etc. In this way, the forward wall 14 of the dispenser 10 is nearest an individual (now shown) in facing relationship to the forward wall 14.

[0009] The housing 12 further includes a bottom surface 22. The bottom surface 22 is "bi-planar". That is, the bottom surface 22 is formed by two surfaces, 24 and 26, which intersect along an edge 28 at an angle which is less than 180°. The surfaces 24 and 26 may be planar or curvilinear.

[0010] The bottom surface 22 further includes portions defining a discharge opening 30. The discharge opening 30 has a length dimension, illustrated by broken line A, and a width dimension B, illustrated by broken line B. The width dimension B is generally in a parallel orientation with respect to the orientation of either the rear wall 16 or the forward wall 14 and generally in a transverse or perpendicular orientation with respect to the orientation of one of the side walls, 18 or 20. The length dimension A is generally in a transverse or perpendicular orientation with respect to the orientation of either the rear wall 16 or the forward wall 14 and generally in parallel orientation with respect to the orientation of one or both of the side walls, 18 or 20. This orientation

of the opening 30 with respect to the bottom surface 22 may also be referred to as "front-to-back", i.e., wherein the length dimension A, longer of the two dimensions, A and B, is oriented in a direction from the forward wall 14 to the rear wall 16.

[0011] FIG. 1A is a portion of the dispenser 10 in cross section and more clearly illustrates the position of opening 30 with respect to the bottom surface 22, and particularly with respect to the surfaces 24 and 26.

[0012] FIG. 2 illustrates a dispenser 10A which is substantially similar to the dispenser 10, except that the opening 30 is defined solely by the dimension of the surface 24 of the bottom surface 22.

[0013] FIG. 2A is a portion of the dispenser 10A in cross section and more clearly illustrates the position of opening 30 with respect to the bottom surface 22 and particularly with respect to the surfaces 24 and 26.

[0014] FIGS. 3A-E illustrate several examples of the shape of the discharge opening 30. The respective length dimensions of each shape in FIGS. 3A-E are illustrated by broken line A. The respective width dimensions of each shape in FIGS. 3A-E are illustrated by broken line B.

[0015] In some instances, for example in FIGS. 3C and 3D, broken line B1 and B2 illustrate separate width dimensions of varying size within each of the respective shapes. However, in these instances, the length dimension A remains greater than the larger of either width dimension B1 or B2.

[0016] The shape of the discharge opening 30 illustrated in FIGS. 1 and 2 may be characterized as "rod-shaped". Referring now to FIG 3A, shape 32 may be characterized as "star-shaped". Shape 34 of the discharge opening 30 illustrated in FIG. 3B may be characterized as "clover-shaped". Shape 36 of the discharge opening 30 illustrated in FIG. 3C may be characterized as "dumbbell-shaped". Shape 38 of the discharge opening 30 illustrated in FIG. 3D may be characterized as "keyhole-shaped". Shape 40 of the discharge opening 30 illustrated in FIG. 3E may be characterized as "oval-shaped".

[0017] Referring now to FIGS. 4A and 4B showing embodiments not in accordance with the invention, two columns 42 and 44, each containing a plurality of vertically stacked folded sheets 46 and particularly a plurality of vertically stacked interleaved sheets, are illustrated. More particularly, within each column 42 and 44, each sheet 46 is generally folded in half upon itself such that the folded halves capture the trailing edge 54 of the sheet directly below it and the leading edge 52 of the sheet-directly above it. Each column, 42 and 44, is supported within a dispenser 48 by the bottom surface 22. The dispenser 48 is similar to the dispensers 10 and 10A. For purposes of describing the folded sheet 46, only the forward wall 14, the rear wall 16, the bottom surface 22 and the discharge opening 30 of the dispenser 48 are illustrated. As previously mentioned, the dispenser 48 may be secured to a support surface 50, such as a wall, by securely attaching the rear wall 16 to the support surface 50.

[0018] The interleaved folding pattern illustrated in FIGS. 4A and 4B result in a "front-to-back" sheet dispensing sequence. In other words, referring to FIG. 4A, the portion of the sheet 46 extending through the opening 30 is nearer the forward wall 14 than the rear wall 16. As such, the sheet 46 in FIG. 4A is in the "front" stage of the front-to-back sequence. As the remaining portion of the sheet 46 extending through the opening 30 of the dispenser 48 (FIG. 4A) is removed, the leading edge 52 of the next sheet 46 extends through the opening 30 (FIG.4B). The portion of this sheet 46 extending through the opening 30 in FIG.4B is nearer the rear wall 16 than the forward wall 14. As such, the sheet 46 in FIG.4B is in the "back" stage of the front-to-back sequence.

[0019] Referring now to FIG.5, the dispenser 10 is illustrated in dispensing operation. Portions of the side wall 18 and forward wall 14 are removed so that the column 42 containing the plurality of vertically stacked, folded sheets 46 positioned within the housing 12 of dispenser 10 may be illustrated. The plurality of vertically stacked, folded sheets 46 are supported by the bottom surface 22.

[0020] As previously described, the length dimension, illustrated by broken line A, of the discharge opening 30 is greater than the width dimension illustrated by broken line B. The orientation of the discharge opening 30 may be described by reference to the orientation of the length and/or width dimension thereof with respect to either the forward and/or rear walls, 14 and 16, respectively and/or the side walls 18 and/or 20. For example, as illustrated in FIG. 5, the length dimension A is generally in a transverse orientation, and desirably in a perpendicular orientation, with respect to the orientation of either the forward wall 14 or the rear wall 16 and generally in a parallel orientation with respect to the orientation of either side wall, 18 or 20. Another description of the orientation of the opening 30, for example, would be the width dimension B is generally in a transverse orientation, and desirably in a perpendicular orientation, with respect to the orientation of either side wall, 18 and/or 20 and is generally in a parallel orientation with respect to the orientation of either the forward wall 14 and/or the rear wall 16.

[0021] FIG.5 further illustrates a portion of one of the sheets 46 extending through the discharge opening 30. More particularly, the leading edge 52 of the sheet 46 extends below the opening 30 and a portion of each side edge 56 extends below the opening 30. In the process of dispensing sheets 46 from the dispenser 10, the side edges 56 of the sheets 46 are urged inwardly towards each other or are converged by the width dimension B of the opening 30 as said sheets pass through the opening 30. In this way, it may be said that the sheets 46 are "narrowed" by the width dimension B of the opening 30 as the sheets 46 pass through or traverse the opening 30. According to the invention, it is desirable that the

stack of folded sheets 46 are configured such that the leading edges 52 extend across the opening 30 parallel to the width dimension B (i.e., perpendicular to the length dimension A).

[0022] While the invention has been described in detail with respect to specific embodiments thereof, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily conceive-of alterations to, variations of and equivalents to these embodiments, within the scope of the claims.

Claims

1. A dispenser (10) for dispensing a plurality of vertically stacked, folded sheets (46) each having a leading edge, a trailing edge and spaced-apart side edges, the dispenser (10) comprising:

   a forward wall (14) and a rear wall (16) connected by spaced-apart side walls (18, 20), the rear wall being adapted for securing the dispenser to a support; and
   a bottom surface (22) defining an opening (30) having a length dimension (A) greater than a width dimension (B), the bottom surface (22) being formed by first and second surfaces (24, 26);
   wherein, in use, the side edges of each sheet (46) are urged inwardly by the width dimension (B) of the opening (30) as said sheet (46) passes through the opening (30);

   characterised in that the first and second surfaces (24, 26) intersect along an edge (28) parallel to the width dimension (B) of the opening (30) at an angle of less than 180° such that the first surface (24) extends in an upward direction from the edge (28) towards the forward wall (14) of the dispenser, at least part of the opening (30) being defined by the first surface (24).

2. The dispenser of claim 1, wherein the length dimension (A) of the opening (30) is in a transverse orientation with respect to the orientation of the forward wall (14).

3. The dispenser of claim 2, wherein the length dimension (A) of the opening (30) is perpendicular to the forward wall (14).

4. The dispenser of claim 1, 2 or 3, wherein the shape of the opening (30) is characterised by a shape selected from the group which includes rod-shaped, oval, star, dumbbell, clover, elliptical, keyhole-shaped or oblong.

5. The dispenser of any preceding claim, in combination with a plurality of stacked, folded sheets (46) within the dispenser (10).

6. The dispenser and stacked, folded sheet combination of claim 5, wherein the sheets (46) are interleaved.

Patentansprüche

1. Blattspendevorrichtung (10) zur Ausgabe einer Mehrzahl von vertikal übereinandergelegten, gefalteten Blättern (46), von welchen jedes eine Vorderkante, eine Hinterkante und durch einen Zwischenraum voneinander getrennte Seitenkanten aufweist, wobei die Blattspendevorrichtung (10) umfasst:

   eine Vorderwand (14) und eine Rückwand (16), die durch Seitenwände (18, 20), die durch einen Zwischenraum voneinander getrennt sind, verbunden sind, wobei sich die Rückwand eignet, die Blattspendevorrichtung an einer Halterung zu befestigen; und

   einer Bodenfläche (22), die eine Öffnung (30) definiert, die eine Längenabmessung (A) aufweist, die größer als die Breitenabmessung (B) ist, wobei die Bodenfläche (22) durch eine erste und zweite Fläche (24, 26) gebildet ist;

   wobei beim Durchgang des Blattes (46) durch die Öffnung (30) die Seitenkanten jedes Blattes (46) durch die Breitenabmessung (B) der Öffnung (30) zueinander nach innen gedrängt sind;

   dadurch gekennzeichnet, dass sich die erste und zweite Fläche (24, 26) entlang einer parallel zur Breitenabmessung (B) der Öffnung (30) angeordneten Kante (28) in einem Winkel von weniger als 180° schneiden, und zwar derart, dass sich die erste Fläche (24) in einer Aufwärtsrichtung von der Kante (28) zur Vorderwand (14) der Blattspendevorrichtung hin erstreckt und zumindest ein Teil der Öffnung (30) durch die erste Fläche (24) definiert ist.

2. Blattspendevorrichtung gemäß Anspruch 1, wobei die Längenabmessung (A) der Öffnung (30) in einer Querausrichtung in Bezug auf die Ausrichtung der Vorderwand (14) ist.

3. Blattspendevorrichtung gemäß Anspruch 2, wobei die Längenabmessung (A) der Öffnung (30) senkrecht zur Vorderwand (14) ist.

4. Blattspendevorrichtung gemäß Anspruch 1, 2 oder

3, wobei die Form der Öffnung (30) durch eine Form aus der Gruppe umfassend stab-, stern-, hantel-, kleeblatt-, schlüssellochförmige und ovale, elliptische oder rechteckige Formen beschrieben ist.

5. Blattspendevorrichtung gemäß jedem der vorhergehenden Ansprüche kombiniert mit einer Mehrzahl übereinandergelegter, gefalteter Blätter (46) innerhalb der Blattspendevorrichtung (10).

6. Blattspendevorrichtung und Kombination übereinandergelegter, gefalteter Blätter gemäß Anspruch 5, wobei die Blätter (46) Zwischenlagenblätter sind.

Revendications

1. Distributeur (10) pour distribuer une pluralité de feuilles pliées (46), empilées verticalement, chacune ayant un bord d'attaque, un bord de fuite, et des bords latéraux espacés, ledit distributeur (10) comprenant :

une paroi avant (14) et une paroi arrière (16) connectées par des parois latérales espacées (18, 20), la paroi arrière étant adaptée à l'immobilisation du distributeur sur un support; et
une surface de fond (22) définissant une ouverture (30) ayant une longueur (A) supérieure à une largeur (B), la surface de fond (22) étant formée par une première et une seconde surfaces (24, 26);
distributeur dans lequel, en cours d'utilisation, les bords latéraux de chaque feuille (46) sont poussés vers l'intérieur par la largeur (B) de l'ouverture (30) alors que ladite feuille (46) passe au travers de l'ouverture (30);

caractérisé en ce que la première et la seconde surfaces (24, 26) se croisent le long d'une arête (28) parallèle à la largeur (B) de l'ouverture (30) selon un angle inférieur à 180° de telle sorte que la première surface (24) s'étend dans une direction ascendante à partir de l'arête (28) vers la paroi avant (14) du distributeur, au moins une partie de l'ouverture (30) étant définie parla première surface (24).

2. Distributeur selon la revendication 1, dans lequel la longueur (A) de l'ouverture (30) est orientée transversalement par rapport à l'orientation de la paroi avant (14).

3. Distributeur selon la revendication 2, dans lequel la longueur (A) de l'ouverture (30) est perpendiculaire à la paroi avant (14).

4. Distributeur selon revendication 1, 2 ou 3, dans lequel la forme de l'ouverture (30) est caractérisée par une forme sélectionnée dans le groupe qui inclut une forme en bâton, en ovale, en étoile, en haltère, en trèfle, en ellipse, en trou de serrure ou oblongue.

5. Distributeur selon l'une quelconque des revendications précédentes, en combinaison avec une pluralité de feuilles pliées (46) empilées dans le distributeur (10).

6. Combinaison du distributeur et des feuilles pliées empilées selon la revendication 5, dans laquelle les feuilles (46) sont intercalées.

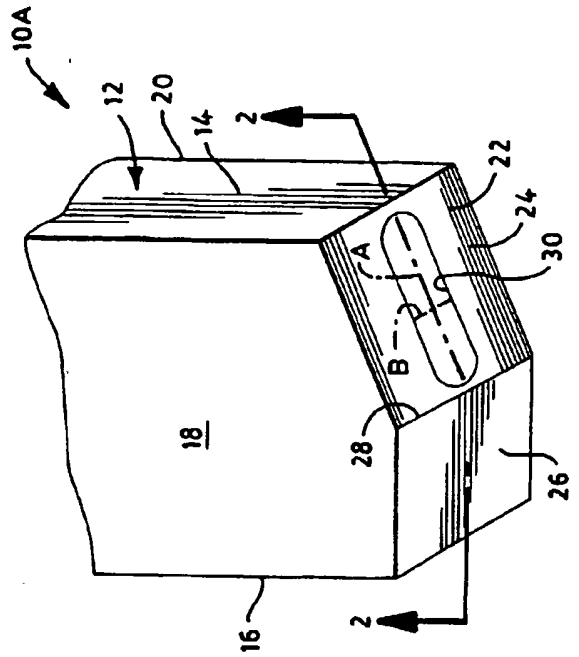

FIG. 2

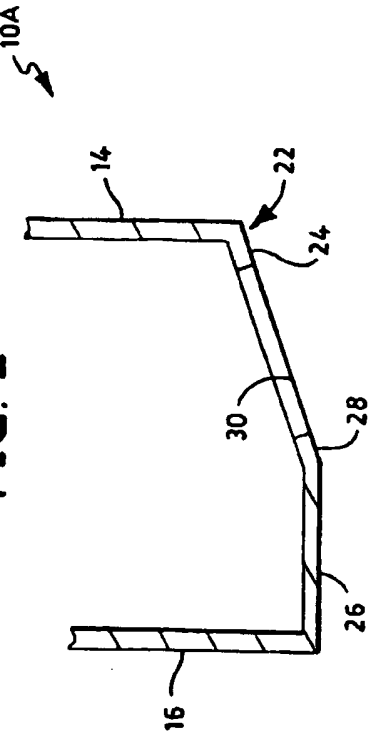

FIG. 2A

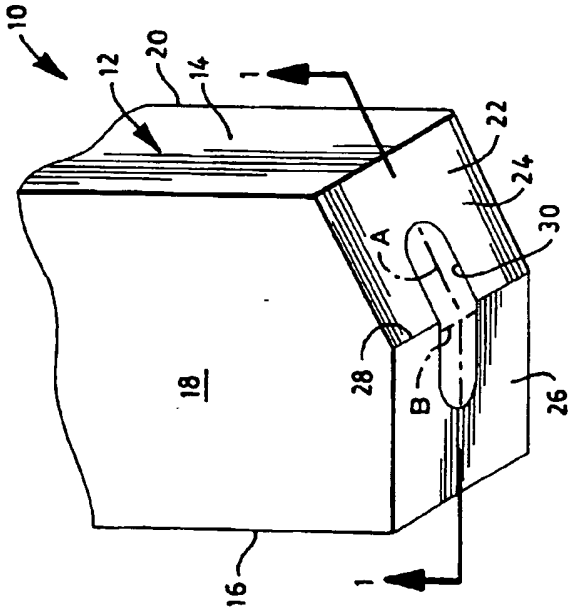

FIG. 1

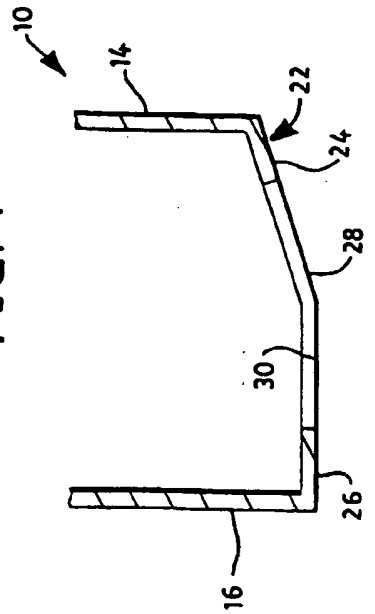

FIG. 1A

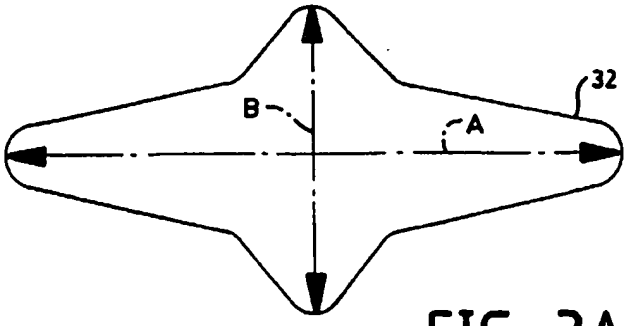

FIG. 3A

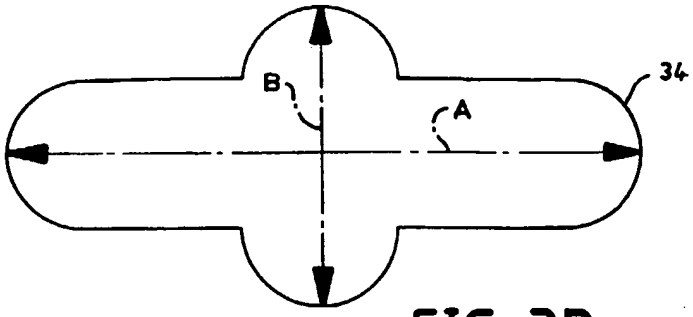

FIG. 3B

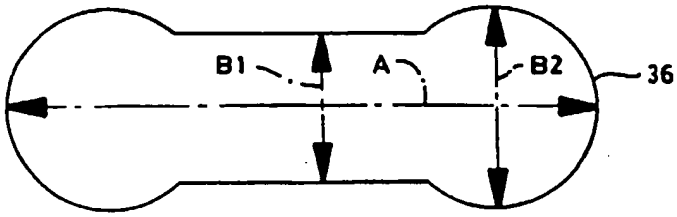

FIG. 3C

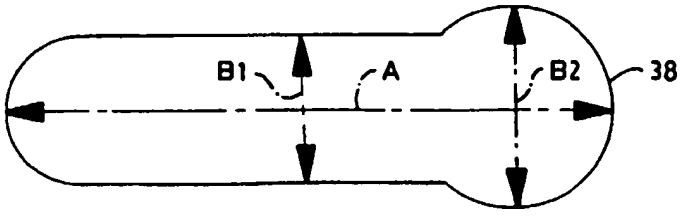

FIG. 3D

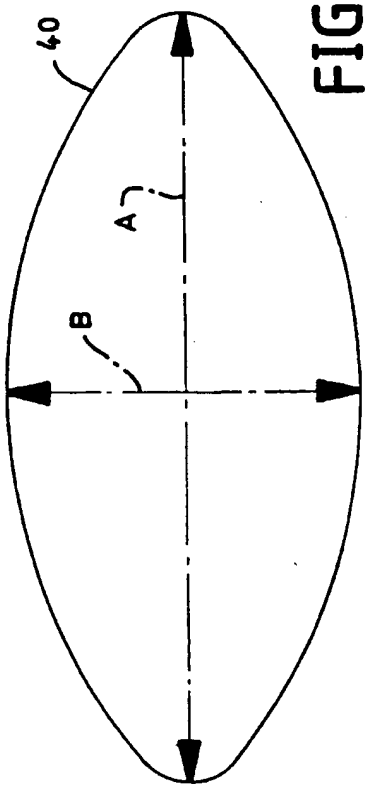

FIG. 3E

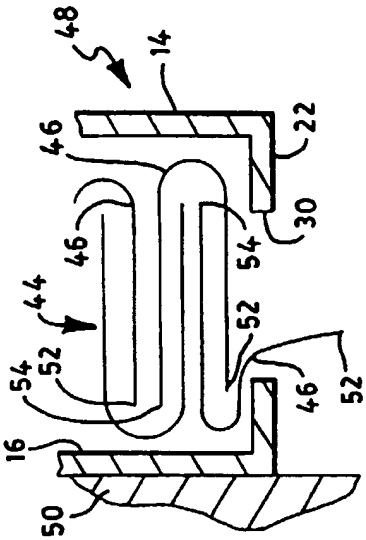

FIG. 4B

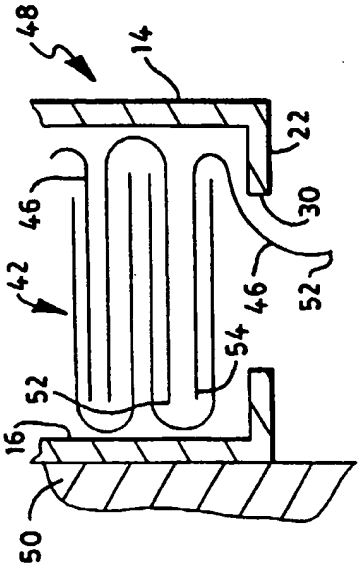

FIG. 4A

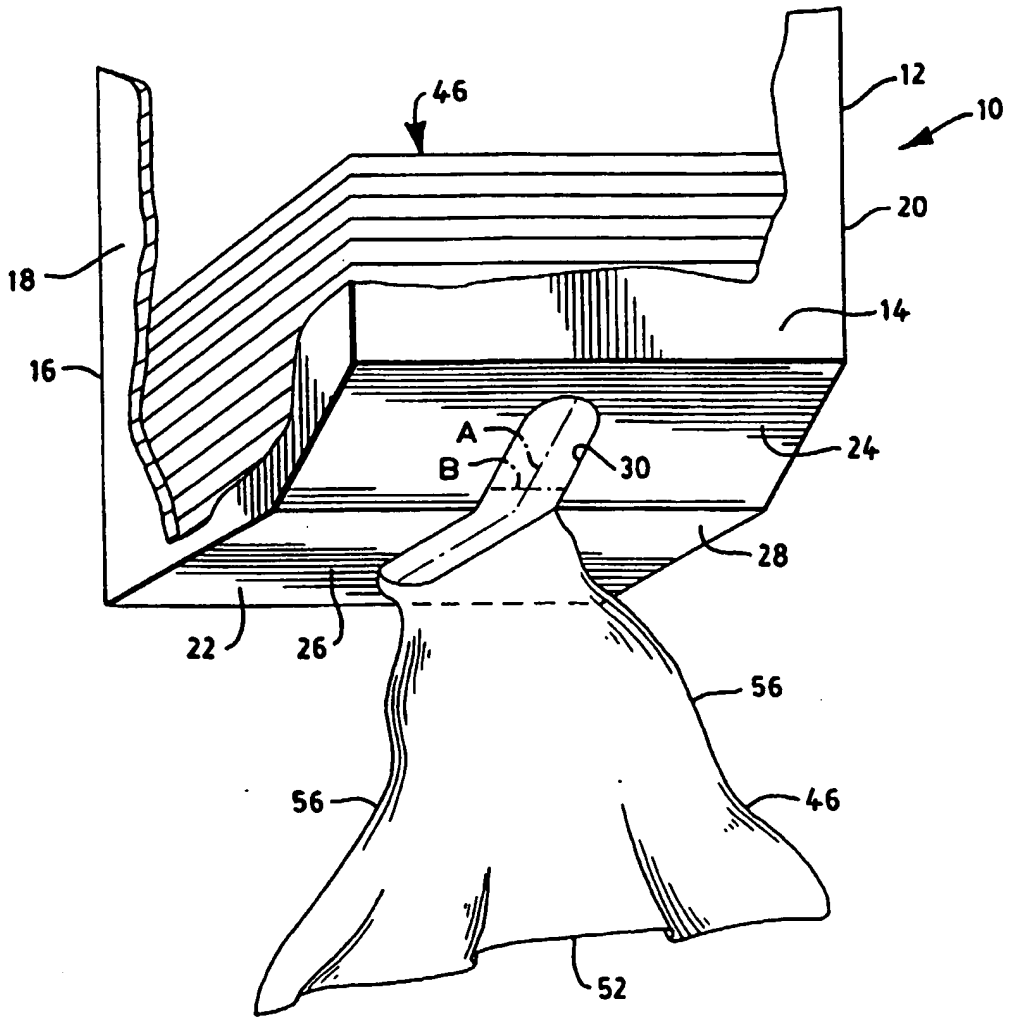

FIG. 5